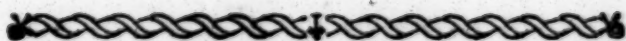


THE
PHILOSOPHY
OF
PHYSIC.



[Price 3s. 6d.]



T H E
P H I L O S O P H Y
O F
P H Y S I C,

Founded on one general and immutable
Law of Nature, the *necessarily-relative*
Agency of Elementary Fire.

“ The medical Virtues of Antimony depend on
its Phlogiston.”

Vide Sir Torbern Bergman, Opus. Med. et
Chemic. vol. 3. art. 31.

By T. DEWELL, M.D. A
MALMESBURY, WILTS.

The SECOND EDITION, revised & corrected.

M A R L B O R O U G H:
P R I N T E D B Y E. H A R O L D;
F O R J. M U R R A Y, N O. 32, F L E E T - S T R E E T, J. B E W,
N O. 28, P A T E R - N O S T E R - R O W, L O N D O N; W. T A Y -
O R, B A T H; A N D J. E L L I O T, E D I N B U R G H.
M.DCC.LXXXV.



P R E F A C E.

WHEN the first edition of the following sheets came from the press, it was suggested to the author, that the text was not sufficiently clear to convey the intended ideas; and that the presumed identity of phlogiston and elementary fire was not sufficiently supported. With respect to the first objection, the author hopes that his opinions will now be clearly understood; and as to the last, no proof or
force

force of argument has come to his knowledge, to prevent his advancing the same position as before ; and he flatters himself that he has now so strongly supported it, as to merit at least a candid and fair discussion ; on which ground he will be ready to meet all contrary opinions :—and the more especially so, since the invisible oracles of science, in their criticisms on the first lines of practice, have, in benevolence to mankind, vouchsafed to grant, that the humoral pathology may hereafter rise again in despite of the spasmodic doctrine, if ever the nature of the principles and mixture of animal fluids should
be

(vii)

be better explained and understood than they have hitherto been.*

Sic prædicant oracula et illa nemo impunè dubitet.

* Vide Monthly Review, Feb. 1785.

INTRO-

Correction to be made
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error.

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Corrections to be made previously to the reading, and exclusively of evident typographical errors.

INTROD. p. 4, l. 3, for *matter*, r. *bodies*.

p. 8, l. 18, for *totally*, r. *thence*.

p. 8, l. 19, for *particular*, r. *established*.

p. 15, l. 6 of note, for *fills absolute space*,
r. *pervades absolute space*.

p. 19, l. 3 of note, dele *the stoves of*

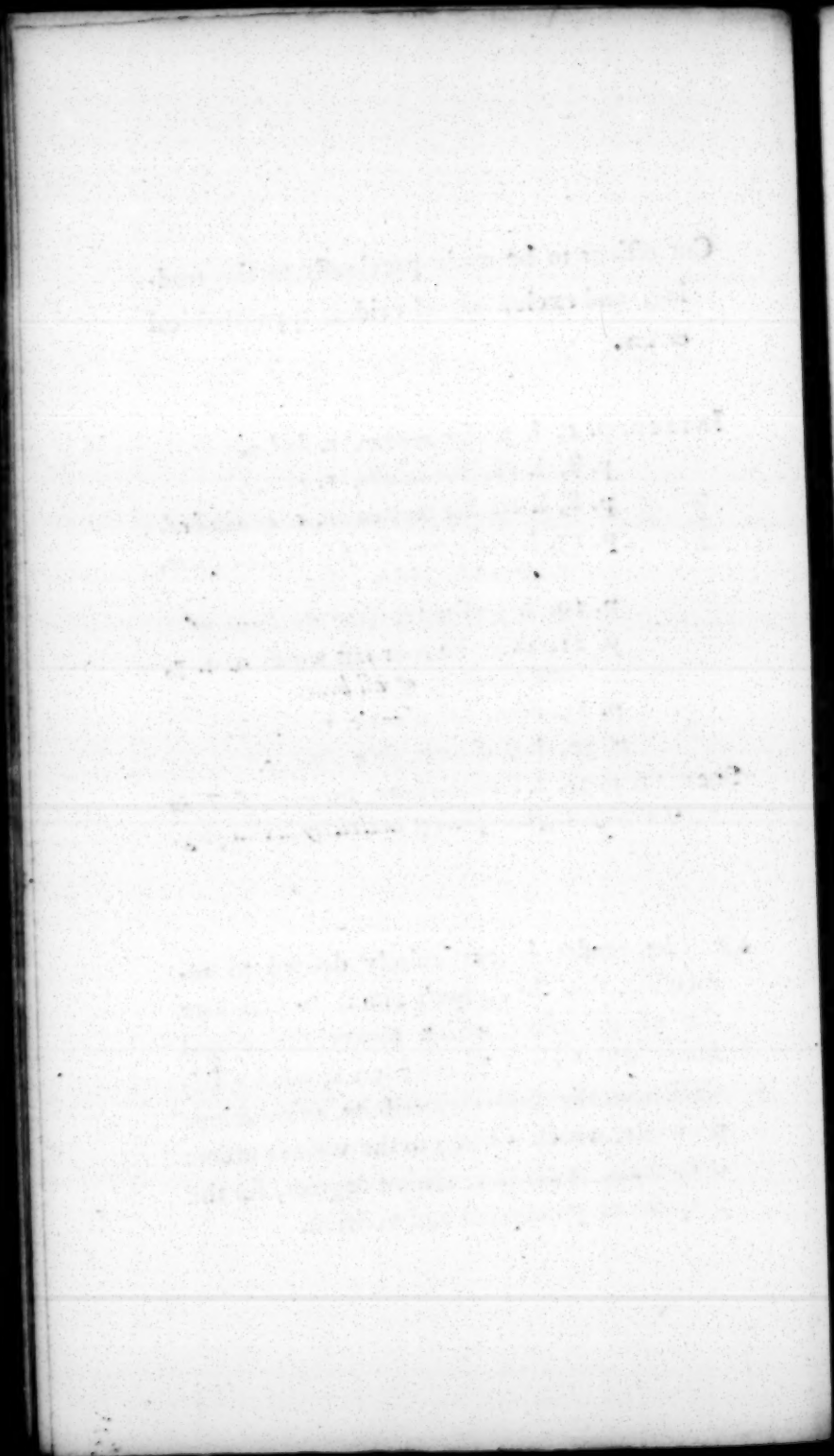
p. 21, dele the four last words of l. 7,
and r. *matter of all beat*.

p. 23, note, for *cheraic*, r. *chemic*.

p. 30, l. 6 of note, dele *absolute*.

SECT. 15, p. 34, l. 8 of the note, for *good effects in cleansing*, r. *good effects of electricity in cleansing*.

✂ The reader is particularly desired to remember, that the author's aim is to elucidate the natural cause which moves the animal fibre; which cause he considers as wholly distinct from that superior attribute, or conscious principle, which is given to the various orders of animals, in various relative degrees, for the purposes of perception and volition.



INTRODUCTION.

TH E quotation from the greatest
chymist of the age, the late Pro-
fessor Bergman, which is recited in the
title page, shakes the received opini-
ons in physic to their foundation ; and
must convince its professors that the
establishment of medical science, on a
satisfactory basis, can be effected only
by investigating, elucidating, and ap-
plying the primary and superior natu-
ral cause of animal heat and motion,
as the leading consideration ; which
will necessarily clash with, and subvert
all systems founded on the inferior and
and secondary rank of causes only.
These were the ideas which gave rise to

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the first edition of the Philosophy of Physic ; since which time I have been confirmed in my opinion of the identity of phlogiston* and elementary fire by the Abbe Bertholon de St. Lazare's experiments on the electricity of vegetables;† and I have the further

* The term Phlogiston will be made use of in the following sheets, because phlogiston is admitted by Prof. Bergman, by Mr. Sherwan, Dr. Priestley, &c. &c. in an aerial form, as in inflammable air : but specific or elementary fire, the matter of heat, will always be intended ; and that particular modification of it, which is adapted to the purposes of animal heat and motion.

† Professor Bergman in his 3d vol. of Opus. Physic. et Chemic. measures the quantity of the matter of heat, or of specific or elementary fire in different bodies, by the degrees of sensible heat which they indicate in their several solutions.—
 Quere, Does not the same process likewise at the same time discover the quantity of inflammable air or phlogiston ; and what difference can there possibly be between the one and the other ?

satisfaction

satisfaction to refer to the experiments of Mons. Lavoisier, and to many more which will be found in the last three volumes of Philosophical Transactions for the confirmation of the two principal points on which I rest ;—

1st. That the decomposition, resolution, and digestion of all animal, vegetable and mineral matter ; and the operations of all other phlogisticating and fermenting processes, produce air ;

and

2dly. That by analyzing or decomposing both natural and factitious airs, however variously combined or modified, water and phlogiston are found to constitute their bulk or body ;

Whence I infer, that phlogiston unites with, and divides, or dissolves water in-

to that elastic tertium called air ;* and that both exist in union with, and disengage themselves in union from, matter, in the form of air ; in all the phlogisticating, vegetating, and fermenting processes in nature ; and that this elastic tertium, produced by the phlogisticating process in animal fluids, is the aura of Dr. Mead, the halitus sanguinis of Haller, the animal spirits of the faculty in general, the expansible animal vapour of Chevalier Rosa, the fixible air of philosophers, and the imme-

* *Monf. Lavoisier's Experiments, & Saussure's Essay on Hygrometry*, it must be owned, are not absolutely conclusive ; but they are so nearly so, as to warrant the inference :—but *Monf. Lavoisier* would, probably, with much more truth have concluded from his experiments, that air was not a simple element, than make the conclusion which he did, that water was not such.

Vide Lond. Med. Journ. vol. 4. no. 4.

diate

diate natural cause of heat and motion in animal bodies. The inadequacy of the inferior and secondary rank of causes has been always felt by professors of physic, who, in their several attempts at improvement, had multiplied theory upon theory, and consequently error upon error in every age, until Dr. Shebbeare, with great judgment and penetration, called in the aids of electricism: but that subject was then, in 1755, so imperfectly understood, and so little known to be connected with all the operations in animal bodies, that his doctrine gained but few advocates; the professors still continuing to adopt the German tenets in succession, and to apply to them all, indiscriminately, the cooling plan of Sydenham; until the fatality of the cynanche maligna convinced them of their error in one instance,

and of the fallibility of the received opinions in general. But had Dr. Shebbeare, or some later medical writer of the same philosophical turn, known and applied the Franklinian opinions respecting the cause and stability of animal heat, probably the science of physic would not now have wanted fixed and general principles for its support. I therefore venture to bring forward his original intentions, supported by the later and more happy opinions of the Drs. Lestie, Franklin, &c. and to apply them as in the following sections ;* under a full persuasion that there is an appointed and relative agent in nature, which esta-

* Vide Cyclopæd. edit. nov. by Dr. Rees,

Articles, Animal Heat,

Fire,

Phlogiston,

Tartar emetic,

blishes,

blishes, actuates, and supports the less, as well as the greater parts of the universal frame; and that the wanted fixed principles are to be obtained by investigating the true nature and operations of this universal cause and its effects. But before I proceed, it may be proper to advance some deductions and definitions, as preparatory to the subsequent reflections; and, at the same time, it may be proper to observe, that the endeavours of our most ingenious inquirers, to establish science by ascending from experiments to conclusions, have been frustrated, probably, by too strict an observance of that Newtonian rule; which, together with the dread of having their opinions fall into the broad mass of human mistakes, has hitherto prevented such bold and decisive conclusions, as the assistances of theory

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might

might have supplied ; for experiments alone, unassisted and unapplied by theory agreeing with the evidences of the senses, will never establish science ; of which truth there is sufficient proof in the little good hitherto effected by infinite labour and industry, when confined to the experimental line alone : and, particularly in physic, by thus admitting no proposition which experiment will not strictly sanction ; from the experiments of one day, and of one person, materially differing from those of another ; and likewise from the absolute impracticability of bringing experiments home in their application to physic, without the aids of induction, it is totally impossible to bring forward any particular authorities, verbatim, to form a proper foundation for medical superstructure ; but notwithstanding this impossibility, it will

will appear to all, conversant with such writings and such inquiries, that the following deductions and definitions, however presuming, chimerical, and eccentric they may appear to men of great delicacy, are fairly made from the aggregate of facts; and are further supported by the concurring evidences of the senses; which both daily and hourly confirm it to be a truth, that there is in nature one universal agent,* to which all others are relative and subservient; and that we can judge of the true nature, or essence of this agent, only by the effects which it pro-

* Whether animal heat and motion are considered as the effects of two elements, acting in animal matter by a double elective attraction, or as the effects of one element only in the act of decomposing animal matter, makes no difference in physiology; but the latter idea will be uniformly contended for, for it is supported both by common sense and facts, and supplies a very general solution of medical difficulties.

duces;

duces; which knowledge of its effects forms the first consideration in pathology and therapeutics.*

* As the universality of the relative agent will be invariably maintained, it may not be amiss, in this place, to meet an objection which will instantly be made to its identity in inflammable and rarified airs, from the inflammability of the former, and not of the latter; and to notice, that the former is loaded with phlogistic matter decomposing, and that the latter possesses only phlogistic matter decomposed; and that consequently there is a difference in positive power, between the two, of at least one hundred to a decimal:—and further to remark, that substances positively circumstanced with respect to the universal agent, such as oil, wax, pitch, resin, wood, gunpowder and spirits, are made to burn by their parts being, at the touch of the flame of a candle or match, violently agitated with the same motion as the flame of the candle or match possesses in itself; which violent agitation is communicated from particle to particle and kept up, *inter se*, as the action of the flame of the candle or match is, by the positive states of such particles being influenced by the negative state of the surrounding medium. DE-

DEDUCTIONS AND OBSERVATIONS
FROM THE AGGREGATE OF WELL
KNOWN EXPERIMENTS.*

I. Phlogiston, inflammable air, elementary fire, and the electric fluid,

* There cannot be a necessity for cases and experiments to corroborate the points to be advanced, when every day's and every hour's experience of effects proves them by the evidences of the senses; but to such philosophers as require experimental proofs, the utmost satisfaction may be had, by referring to the Philosophical Transactions, both foreign and domestic, and in particular to the works of Mr. Kirwan, Mr. Cavendish, Dr. Priestley, Professor Bergman, Mons. Lavoisier; of the Abbe Berthelot de St. Lazare, and of Saussure on Hygrometry, &c. &c. And, as to medical cases, such occur every hour in proof, in every case, in every instance; but if the incredulous shall demand them, I will undertake to produce five hundred well attested cases in the course of a twelve month.

are

are the same principle and inquiettent matter ; and all distinctions are merely chemical illusions.*

II. Phlogiston dissolves water apparently into air.†

* The celebrated theory which maintains that phlogiston and elementary fire are different and opposite principles; and that there is in animal heat, in circulation, respiration, and in fire, a double elective attraction, cannot be supported. The operations of one element only are adequate to every appearance which there is of two, either in art or nature :—for a double elective attraction necessarily takes place between bodies positively and negatively circumstanced; and motion and sensible heat are the consequence, as shall be hereafter explained. Besides, it will be adding to the difficulties of science, to admit a multiplicity of causes until such are incontestibly founded; and, in the present instance, very different have been the results of the same experiments made by different persons.

Vide Cyclopæd. edit. nov.

† Add water to calcined limestone, or oyster-shell, or to any other calcined substance, and air will

III. Fixible air is phlogiston and water combined.

IV. From fermentation, effervescence, and boiling water, from fire and flame, and by friction, which are all phlogisticating processes, electric sparks are collected.

V. If fixible air be given to wort, and to flour and water, and the compound be kept in a certain degree of heat, the necessary fermentation for beer and bread will be produced as effectually as with yeast.

will be produced: repeat the calcination, and again add water to the same matter, ad infinitum, and air will be again and again produced, as long as a particle of matter remains to be recalcined: try the experiment every way you will, and use every expedient to exclude the atmospheric air, and the same effect will always be the result, with all kinds of substances either dried or calcined.

VI. Nei-

VI. Neither phlogiston,* earth, air,
nor water can be produced by any
known

* The nature of fire, abstractedly considered, is, and probably ever will be, as incomprehensible to us as the nature of the mind itself: but, it is contended, that its effects in matter lead us by induction to ascertain the degrees of its power in different bodies, and the precise manner of its operation; and consequently teach us the negative powers, of counteraction; which negative powers it is presumed, act only by their capacity of absorption:—thus the tropical aura is positively circumstanced with respect to the polar aura;—thus the atmospheres of sulphur, opium, camphor, brandy, and of animal bodies, are positively circumstanced with respect to the atmospheres of nitre, water, ice, air, and vegetables; and the different bodies act upon each other through, and by, the media of their respective atmospheres or phlogistic auræ;—the positive body throwing off a vortex of aura, extending itself to the aura of the negative body, consequently conveys part of the fire from the body in which it abounds, to the body which

known experiment in a separate or uncombined state.

VII. The decomposition and resolution of received solids and fluids, and their solution, and mixtion with animal fluids, generate heat more or less,* according as the received solids and

which can absorb more, and the positive atmosphere or aura creating more action in the negative atmosphere, the negative body is necessarily influenced, actuated, and attracted: — thus, the sun, the moon, and earth, and that phlogistic medium which fills absolute space act, necessarily, upon each other; with us varying the tides of water, the wind, the seasons, and the weather; and influencing both the health and well being of animal and vegetable nature; and thus, probably, order is preserved in our solar sphere, by the central positive power being equal to the surrounding negative power, and always moving in regular lines.

* Does not the cold, produced by most solutions, arise from a capacity, in one or the other of

and fluids possess and discharge more
or less phlogiston than was previously

of the bodies, of absorbing more fire than was before present in such body? Is not cold thus produced on animal bodies, by the humid part of perspiration absorbing atmospheric fire? In medical practice, does not cold ensue in the stomach and in the fluids, from the absorption of the internal fire by nitre, by water, and by neutral salts and mixtures? And may not the congelation of quicksilver, inclosed in a tube, and perpetually washed with water, or even with spirits, be attributed to the same cause?—The negative power or capacity of absorption being greatest in the atmosphere, the quicksilver, consequently, instead of receiving fire from the spirits or atmosphere, parts with its own: whereas two bodies unequally circumstanced with respect to positive and negative power, and absolutely excluded from all outward communication, would in time become equally circumstanced in power; and thence continue still to all eternity.

present

present in the animal fluids.*

VIII. Certain proportions of phlogiston and water unite ~~with, or divide into,~~ *& form* the various densities of air, both natural and facitious, and such may be loaded with foreign particles.

* Although experimental philosophers cautiously avoid the great question, respecting the reality of fire, yet all their experiments tacitly controvert the Newtonian opinion: which opinion wanted the late discoveries in chemistry to solve the difficulty:—in the new edition of the Cyclopædia, by Dr. Rees, will readily be found, under the article fire, an experiment which proves the corporeity of fire:—under the article phlogiston, will be found an experiment which proves that elementary fire, added to the calx of lead and inflammable air, reduced such calx to its metalic form:—and in Dr. Watson's Chemical Essays, vol. 3, page 374, will be found the same reduction made by culinary fire: quere, would not the same metallization have been effected in time by the natural heat and moisture of the atmosphere? which, uniting, would form the necessary phlogiston, or air.

IX. Phlogiston and water exist in all solids and fluids, not separately, but conjoined in the form of air;* and consequently air exists in both solids† and fluids in their most fixed states,

* This idea will, in the following sheets, be always intended by the term phlogistic aura; and the separation of the phlogistic aura will be intended by phlogisticating process or operation.

† So long as phlogiston and water exist in or surround any substance, air will necessarily be produced both within the substance and without it, forming more or less of a peculiar atmosphere to all things, which idea explains Dr. Ingenhousz's mistake of dephlogisticated air always passing off from plants, &c. for such air can be only relatively dephlogisticated, and from some plants, it not all, most assuredly is positively circumstanced with respect to the surrounding natural medium: but such air, &c. may be relatively dephlogisticated with respect to some particular situations.

if

if fluids are fixed in any degree,* and is separated from them in their ultimate resolution.

- X. The phlogistic aura, formed by the division or solution of water by phlogiston, is separated partly in the stomach in digestion; and afterwards in the farther attenuation and resolution of every particle of the chyle, blood and lymph: and this phlogistic aura, always moving on and increasing in power, opens the organs, and carries with it the several matters to be excreted through the several emunctories of the body.

* Is not water, totally dephlogisticated, a solid body?—and does not the dephlogistication of contaminated air in rooms, by the stoves of nitrous fumes, by plants, and watery exhalations, arise only from such nitrous and watery exhalations absorbing the superabundant phlogiston? for wherever the capacity of absorption is greatest, to that point the lines of fire will always be directed.

XI. Phlogistic aura opens the secreting organs, and conveys the excrementitious matter from animal bodies; consequently, as the powers which check* or too much excite its proper operation, are the remote causes of a long catalogue of diseases,† so the powers, which supply or absorb phlogistic aura, become necessary subjects for medical investigation.

* Vide Mr. Charles Darwin's Observations on the retrograde Action of the Absorbents.

† Vide Dr. Hufsey's Enquiry into the Cause and Cure of Fevers.

DEFINITIONS OF THE SEVERAL MODIFICATIONS AND GENERAL DENOMINATIONS OF PHLOGISTON.

PHLOGISTON. The universal agent, and only positive power in nature :— the immediate cause of all motion ; and the matter of absolute space and of all heat ; comprehensible only by its effects.*

ÆTHER. Pure, uncombined phlogiston, the universal, diffused, inquiet-

* The positive or negative state which the body, with which it is joined, bears to the body in contact, or within its influence, determines it to fix, metallize, coagulate, dissolve, ignite, fuse, or dissipate the mixed water and earth with which it is joined ; and there can be no reason to strain the imagination for a second element to complete that process of ignition, or motion, which is necessary to produce such effects.

cent, fluid medium, which forms different degrees of density, heat and action, at the different points of the sphere which it fills, in which its lines must necessarily move, centripetally or centrifugally.*

* Negative power is considered as synonymous with centripetal agency, and attraction; and so is positive power with centrifugal agency and repulsion:—thus when two dissimilar bodies, either in particles or in the gross, are placed near each other or in contact, the one is, necessarily from dissimilarity, positively circumstanced with respect to the other; and, consequently, the *necessarily-relative* agency of elementary fire immediately takes place: and this being universally the case, evinces it to be a general and immutable law of nature; for every substance in nature, which is not an absolute caput mortuum, throws off a phlogistic atmosphere, and when a less is within the phlogistic atmosphere of a greater, the less substance is always attracted, and forced into a contact with the greater; unless another substance in an opposite direction counteracts it by an opposite attraction.

PURE

PURE AIR. The tertium formed at the exact point of solution of water by phlogiston.*

ATMOSPHERIC AIR. Pure air, combined with earthy particles; but perpetually varying in the proportions of water and phlogiston.

FIXIBLE AIR. Pure air, surcharged with a certain excess of phlogistic matter in decomposition.

INFLAMMABLE AIR, or PHILOSOPHIC PHLOGISTON. Pure air, surcharged with the utmost excess of phlogistic matter in decomposition, below the degree of explosion.†

ELECTRIC FLUID. Still the universal agent, not essentially differing from

* Vide Mem. cheraic. the 4th, of the Mem. of the Royal Academy of Sciences at Paris for 1780.

† Wherein consists the difference between inflammable and rarified airs, since the elasticity of both depend upon the quantity of fire?—for the rarefaction of atmospheric air depends on added fire.

æther:—in combination with matter forming, in a certain relative proportion, the support or bond of union; and in excess, the direct, and in defect, the indirect cause of separation.

SPECIFIC OF ELEMENTARY FIRE.

Concentrated particles of phlogiston, whether confined in earthy matter, or in the utmost excess of action;* the degrees of action being

* Elementary or specific fire, in action, is the same as sensible or culinary fire; and, contrary to the received opinions, requires no pabulum, no aliment, provided it has a communication with a negative medium: the only advantage, which it derives from earthy matter, is, that such matter prevents its too speedy dissipation, by prolonging its extrication; as in burning wood or coal; or retains it longer, as in ignited iron, and in other ignited metalline or solid bodies.

always

always determined by the negative state* of the surrounding medium.†

* Though the terms negative and positive power will be generally used, yet it is to be remembered, that the electric fluid in the human frame is supposed to act in aura only; which is a modification of it, formed by its union with the humid part of matter.

† The above definitions lead to a complete solution of the inaugural questions, "*an phlogiston sit substantia, an qualitas; et qui sit naturæ commune vinculum.*"

OBSER.

OBSERVATIONS.

However extraneous and unphilosophical some of the foregoing deductions and definitions may appear to men attached to particular habits of thinking ; yet let them, if not for the sake of simplicity and use, let them for the sake of common sense, grant the identity of phlogiston and elementary fire ; *
let

* The complex proposition that there are two subtle imaginary elements in nature, the one phlogiston and the other elementary fire, is most certainly erroneous ; and by no means necessary to perpetual motion : for bodies possessing more or less phlogiston, singly, are necessarily positively and negatively circumstanced with respect to each other : and that this acting principle, call it what you will, the anima mundi if you please, should possess in itself an active power without
consci-

let them grant the reality, the universality, and perpetual agency of phlogiston ; let them grant the 2d. 7th, 9th, and 10th deductions, and the subsequent medical observations will want no other support. But previous to the application of the idea of such presumed identity* and agency to the aids
of

consciousness, when relatively circumstanced, is as easily granted, and as easily conceived, investigated, and proved, as that the human mind possesses an active, and self-determining power with consciousness ; but the essential natures of both are, and probably ever will be, totally impenetrable by us.

* The identity of inflammable air, phlogiston, and elementary fire, is already ascertained in reducing metallic earths to metals, which is by experiment proved, by saturating such earths with either inflammable air, phlogiston, or the solar rays collected by a burning lens :—probably nothing more is necessary to the reduction of the several metallic calces, in all which the
necessary

of medicine, let us pursue it more at large in the line of natural philosophy; and totally divest ourselves of all prejudices, and all theories, but such as the evidences of our senses support: and first we may observe that in every space, which appears to us to be a void space, there is a perpetual agency of phlogiston; and that, if that apparently void space be inclosed, as in a diving bell, or in a well-corked bottle filled with atmospheric air, such a space will become immediately still, and agency cannot

necessary radical acid resides, than fire and water; and consequently air to form the vinculum: for although fire, in an inferior degree, may be the matter of the radical acid, and of all other acids, yet a superior degree of it may, by uniting with water, produce inflammable air, or coagulating phlogiston; and a still greater degree may destroy, or decompose the whole of the body with which it may be blended.

Vide definition the 7th.

cannot recommence in it, but by exposing it to an inferior or to a superior medium * And yet it appears that the power of agency will not be lost, from the well-known circumstances that the diver, or a growing vegetable, will live a considerable time in such a space.

We have likewise every reason, both from experiment and the evidences of our senses, to infer, that the solar ray, the electric spark, the matter of light and heat,† and of flame and lightning, are

* This observation is proved by exposing dead bodies to the atmosphere; which though they had been before kept in high preservation for ages, yet upon such exposure are almost immediately decomposed.

† Suppose for a moment, for no man in his senses will entertain the supposition longer, that a corpuscle of matter emanates from the sun, as in light and heat; and that in this corpuscle an internal war is necessarily maintained in its journey

are different degrees of phlogiston in action ;—that phlogiston is the universal medium in nature ; or great, æthelial, vast, expanse ; and that the most regular and uniform process of centripetal and centrifugal agency is always going on beyond the earth's atmosphere, in converging and diverging lines ;* either rectilinear, rotular, vortical, or by vibrations, or otherwise. We may

ney to the earth, between the two warring elements phlogiston and elementary fire ; and the double elective theory of heat will sink in its own absurdity.

* Can it be truly said that there are such positive powers in nature as either attraction, repulsion, or gravitation ? I will venture to advance that there is no such positive power as either ; and that phlogistic agency in unbounded absolute space, and in every particular body, relatively considered with respect to the positive and negative states of different bodies, is tantamount and equal to every attracting, repelling, or gravitating effect which we observe in nature.

con-

conclude, that the sun is its central point, or the focus of centrifugal power; and that the extreme line of a certain sphere, determinable by its centrifugal power, is that most divided, expanded, and diffused state, in which, by the laws of nature, its centripetal power commences; and that this centripetal power necessarily supersedes and prevents that equality of diffusion; and that stillness, fixity, solidity, or extinction of power, which would otherwise produce another chaos. We may likewise conclude, that phlogistic agency governs the situation and motions of the earth; and combining with its elementary principles, earth and water, that it forms the earth's atmosphere in all its densities, and modifies, connects, supports, and actuates the constituent principles of the earth itself, and of every thing that lives and
grows

grows in it ; for which purposes we may presume that it was called forth from the chaotic mass, and endowed with sufficient powers at the creation.

The precise manner, in which the first lines of cohesion are formed, depends, probably, on the affinities in the different sorts of matter,* which can connect with each other, only in that medium, in which the internal and external phlogistic auræ are exactly balanced : which is exemplified in the formation of the first lines of the nucleus and embryo, in which, reaction

* *Mons. Buffon* observes, “ that the penetrating power of attraction, combined with the expansive force of heat, produces organic molecules, and sets brute matter in motion ; determining it to such or such a form, as well internally as externally, when it is wrought in all dimensions at the same time : and that thus are formed the germs of animals and vegetables.”

is for a time merely tonic ; but when the nucleus and embryo are exposed to the common atmosphere, the stamina are then completed, and are sufficiently strong to bear the atmospheric, added to the tonic reaction : then the system of circulation is totally changed ; new channels are opened to convey the phlogisticating matter, and the passive forms are actuated and supported by perpetual evolutions of phlogistic aura, supplied by the ingesta. and regulated by atmospheric and tonic reaction.

Then in nutrition the agency commences in the stomach* by the separation

* Part of the fire of brandy and of volatiles, musk, camphire, and of some poisons, passes readily and suddenly from the stomach to the brain, in excess of aura, without going the round about circuit of the chyle ; for the nerves
are,

ration of phlogistic aura, in the decomposition and resolution of the various foods which we give in infancy ; it is thence continued in the chyle, in the blood. and in the lymph, different bodies more quickly or slowly decomposing, according to the modification of their parts. Thus the phlogistic aura is gradually supplied, and acquires force as it advances, establishing and supporting both animal * and vegetable

are, most probably, hollow tubes or cells: in the ox the olfactory nerves are visibly so; and it is therefore a reasonable supposition that they are universally so; and that phlogistic aura pervades them.

* The great question respecting stimulus and excitability, is, whether animal bodies are actuated by a passive, tonic power; or whether the reaction arises from a conscious perception influencing matter; but whether the reaction is considered as a passive effect, or the determination of a conscious power; phlogistic aura is the instru-

getable life, and exciting all the ne-
cessary actions, and functions in all
d 2 bodies

instrument ; and it is reasonable to suppose that when aura distend , inflates , or compresses the tonic power , the effect of the local distention , inflation , or compression is repeated on the brain , and creates pleasing or unpleasing sensations in the mind : and as neither distention , inflation , nor compression can take place in any part of living matter , without some sensation from consequent motions in the brain , so it is immaterial whether the effect or reaction is considered merely as a tonic effect , or not ; that is , whether it is merely a passive effect , or the reaction of a conscious principle , influencing matter ; for neither the one nor the other renders the idea of stimulus , excitement , or irritability , absurd or nugatory : but it is contended , that the reaction , from stimulus , is merely tonic , and passive in all instances ; external objects acting upon the tonic system , by influencing the contained aura ; and consequently distending , inflating , or permitting the tonic system to collapse ; neither of which can take place without pleasing or unpleasing sensations in the mind : which is
apparent

bodies and seeds, which are properly constituted for life and vegetation; perpetually collecting from the ingesta, whether manure or diet, and circulating to all the exhaling pores; by which, and by the inhaling pores, all bodies give and receive, reciprocal advantages to and from the atmosphere.

The phlogisticating process may be either so sudden, or so slow, that in either extreme it may be fatal; instances of which we see every day in animal, as well as in vegetable life; in the former, which is more particularly my subject, we remark the sudden, rapid, and abundant process to be fatal, as in the plague, in excessive heat, in the fate of the Marseilles' porters, and

apparent from the uncomfortable or comfortable state of the mind, when the whole or any part of the body is warm or cold, weak or in strength, relaxed or braced, indisposed or well.

in

in violent exercise ; we likewise notice it in the effects of the grotto del cani, in noxious vapours and fumes, in exhalations from wells and confined places, in odours from large collections of flowers, and in large doses of opium, brandy, and laurel water ;* all

d 3

which

* Their supposed sedative power is denied, as likewise is all sedative agency, considered as a positive power : for camphire, valerian, musk, and opium are all superior powers in the phlogisticating process, and are therefore sedative only in the inferior state of agency ; as air, nitre, water, and neutral salts are sedative in the superior state of agency.

Is not the peristaltic motion, which is common to all living, vegetable and animal matter, a necessary effect of the tonic power, produced by the positive state of the internal aura, co-operating with the negative state of the external aura, or vice versa ? and may not the same idea be maintained, to explain stimulant power producing its effect by means of the internal aura ?

—may

(xxxviii)

—may not hence arise the motions in the sensitive plant, and willow; in the torpedo and electrical eel?—and does not this idea extend to the explanation of the effects of all stimulants, both internally given and externally applied; which by positive or negative power produce all their effects, thro' the medium, and excited agency of internal aura?—and yet neither of the received ideas of animal spirits, or of rarefaction or condensation, completely embraces this doctrine; in which the perpetual progressive supply of phlogistic aura, or rarifiable substance, is the primary; and the negative or positive state of this supplied phlogistic aura, with respect to external causes, is the secondary, but not less important, consideration: so that rarefaction stands in the situation of a third effect, produced by a second effect; phlogistic operation being the primary natural cause of all, and consequently the first and leading object for medical investigation:—it will appear to be the cause of peristaltic motion in all living, vegetable, and animal matter; for phlogistic aura in the centre of the pear, the apple, and the nut; in the roots of the tulip and the oak; in the blood, brain, and nerves of animals; and in the juices of fruits and plants, creates, actuates, and supports in them

which give off phlogiston in excess,
which at a certain degree acts by an
electric

them peristaltic motions, by its positive power acting relatively with external objects or causes: thus the peristaltic motion in the stomach and in animal fluids (what celebrated modern anatomist is he who tells us that the blood is alive?) and solids, is instantly lessened by the negative powers of nitre, water, neutral salts, and air; and as instantly increased by the positive powers of spirits, volatiles, camphor, emetic tartar, musk and æther; and do not such effects arise, from natural causes rarefying more or less the internal phlogistic aura, in which aerial form, only, the universal agent can or does exist in either animal or vegetable bodies, without destroying them? thus the negative powers of nitre, water, vegetables and winter cold, excite the tonic power, locally, by attracting the internal fire: but at the same time diminish that power, generally, by absorbing it: and thus spirits, bark, camphire, volatiles and summer heat, actuate the tonic power, both locally and generally, by adding to the quantum of fire; and hence both negative and positive powers

electric shock, in too suddenly and violently raising the relative degree of inflation

may be said to produce stimulant, and peristaltic effects ; but the result of all investigation will be, that all operations in animal bodies, from external causes of every sort, arise from involuntary motions of the tonic power, produced by the agencies of phlogistic aura ; which agencies are the natural effects of aura positively and negatively circumstanced ; and that conscious perception is necessary only to volitions ; but is awake to, and sensible of all involuntary operations both on, and in the animal frame, and of their consequent effects.—And here it is to be noticed, that the nerves are fasciculi of hollow cylinders, filled with phlogistic aura of the most exalted and efficient degree ; and that this phlogistic aura is determined to the eye, giving it lustre and animation ; and to every other part ; with a sensible difference between the animated flesh, and that which is dead : and that this phlogistic aura is determined more or less, to particular parts for muscular motions, by the tonic power of the brain, actuated, at pleasure, by the vis imperans or self-determining power, possessed

inflation in the brain, which is necessary to life. On the other hand, the flow
or

possessed by all living animal bodies. And further, that every point of every part of the body, is part of a hollow cylinder, originating in the brain, which hollow cylinder is, from the beginning to the end, filled with phlogistic aura, fixible air, electric fluid, or animal spirits (call it what you will, provided you allow it to be an elastic substance, susceptible of rarefaction and condensation) by means of which an external impulse, as for instance, a stroke upon the finger or toe, is an impulse on the brain itself: the manner of which is aptly illustrated by forcing a bullet into a gun barrel open at both ends, and already full of bullets; when the bullet, forced in at either end, necessarily, and at the same instant of time, drives out a bullet from the opposite end: thus the impulse on the finger or toe by a retrograde action of aura, with respect to the animal, but by a progressive action with respect to the force impelling, impels the brain itself; and excites a general or particular increase or consent of action of the whole or part of the system, by means of aura actuated in other cylinders:

or deficient phlogificating process will have fatal effects, sooner or later; and the sooner, when suddenly taking place after the excess, and consequent-

ders: thus the mind, or vis imperans, by means of the tonic power of the brain, actuates a part, or the whole, by progressive aura; and thus motions are conveyed to the brain, and ideas are raised in the mind, by external objects acting on the brain by retrograde aura. Hence the immediate actions of particular powers in the stomach are clearly understood; for powers possessing phlogiston in defect, absorb, and invite the nervous aura to the stomach, and lessen the actions generally, and powers, which contain it in excess, repel the nervous aura, add to its power, and determine the surcharge universally: the nervous aura being always understood to be the most exalted degree which animal bodies can bear:—further, it is contended, that whether the nerves are hollow tubes or not, the elastic nature, agency, and diffusibility of that fire which is in all animal matter, considered in the most simple view, will explain every appearance in the animal œconomy.

ly,

(xliii)

ly, too suddenly permitting the relative degree of inflation to collapse : but that I may not ramble too far into the wilds of theory. I submit the following practical sections, as I proposed, to the judgment of impartial readers.

S E C-

20 JY 64

S E C T. I.

THE two leading branches of the science of physic, which describe the human œconomy either in health, or in every natural and occasional deviation from it, are explained by different teachers and writers under the heads of physiology and pathology, and particularly well by Gaubius and Haller; but notwithstanding every thing which has been taught and written, it is universally acknowledged, and too sensibly felt by practitioners, that some fixed and general principles are still wanted; and that this unhappy defect in medical science, has been to the disgrace of the profession, the source of every species of deception and destructive quackery. In this situation there
seems

seems to be little or no real difference between the man of science and the empiric. The empiric boldly affirms that his medicine will cure, without knowing more than that it sometimes does; and without knowledge to judge of the nature of the case, in which it did cure, or of the nature of the case for which he proposes it; when perhaps the two cases are totally different, both as to their proximate and remote causes: but the man of true science should have it in his power to assure us, that both his experience, and the fixed principles of his profession, sanction the propriety both of the medicine, and of the plan of cure which he recommends.

S E C T. II.

IT is therefore much to be desired, as well for the benefit of society, as for the honour of the profession, that a
just

just and rational theory of disease was known and established on fixed and general principles; for upon such only professors of medicine can act decidedly and justly, and found a hope of retrieving its credit; and it is more than probable that such a desirable acquisition may be obtained, by applying to physiology the agencies of phlogiston; which, it is presumed, are the natural cause of that heat and motion in animal bodies, which establishes, actuates and supports the vital power, and the several vital, animal, and natural functions; for, though experimental philosophers do not agree in the manner of its agency, yet they all prove that this principle is very active in nature; that it is absolutely necessary to the existence,* and support

* Neither absolute cold nor absolute heat; neither earth, air, fire, nor water, as an absolutely

port of every thing which is ; that it forms an immense proportion of the aggregate, and in its operations produces and supports all the varieties of things ; and that it is never still or at absolute rest in any animate, vegetating, or growing body, or unalterably fixed in any substance whatsoever.*

S E C-

lutely separated body, and totally distinct from other bodies, can be in nature ; for the universal agent pervades all nature ; and binds, fixes, actuates, modifies, destroys, and separates all bodies ; and occasions all their varieties of appearance.

Vide definition the 7th.

* Gaubius in investigating the vital power, supposes it to be an electric power ; and Dr. Monro only observes, that sufficient proof is not produced that it is so. Pray what proof is expected, further than what we have, in a matter which will not admit of positive proof?—Who will ask for an handful of phlogiston ? is it

S E C T. III.

It therefore may be reasonably presumed, that, by investigating, elucidating, and applying the powers of phlogiston, medicine may derive those

it not enough to prove that it exists in animal bodies?

Vide definition the 7th.

As all involuntary effects are produced by evident external causes actuating the tonic power of the brain, through the medium of phlogistic aura, may we not reasonably infer, that the mind has likewise the power of actuating the tonic power of the brain, at pleasure; and thereby of producing all voluntary effects and associations of ideas, through the medium of the same phlogistic aura; which may be both the instrument of all external causes, and of the mind itself? and that both operate by the same instrument is clearly proved by the fact, that the operations of the one cause greatly impede, or totally suspend, the operations of the other.

B

wanted

wanted assistances, which have hitherto eluded the researches of the ingenious of all countries and of all ages, who have all been lost in errors and confusion; which unhappy proof of the weakness of human judgment hath been most notoriously exemplified in the fates of the three celebrated theories of Stahl, Boerhaave, and Hoffman; each of which hath had its day of celebrity and decline, and that, very obviously, for want of the assistances which experimental philosophy has now supplied.

S E C T. IV.

STAHL was of opinion that the solids and the fluids, and the functions in general, were actuated, supported in health, and restored from disease,
by.

by a superintending and administering power inherent in the human frame, which he supposed to be the mind ; he therefore advised that nature should be very much trusted to, and always followed as our pilot.*

Boerhaave considered the powers of the mind, and the several functions of the body, as the result of a natural state of the solids and fluids, established, actuated and supported by some unknown power ; & directed our most particular attention to the quantity and chemical eucrasia of the fluids.† And Hoffman perfectly agreed with his immediate

* A proper regulation of the non-naturals is presupposed in all the theories.

† “ Boerhaave admitted the reality of fire, but his opinions respecting its mode of agency are as unintelligible, as Sir Isaac Newton’s Theory of the Cause is uncertain.”

Vide Dr. Watson’s Chem. Essays, vol. 1. p. 163.

predecessor in his physiology; but, equally uncertain as to the nature of the establishing, actuating, and supporting agent, he, contrary to the preceding pathology, laid the chief stress on the tone of the solids, or on nervous energy.*

S E C T. V.

THE latter opinion has most clearly biaised our present most celebrated writers and teachers in the most essential points of their doctrines; but as tone or nervous energy, or chemical

* Hoffman considered the mechanical modification, and the proper action of parts, as productive of humoral eucrasia; but this idea is clearly too limited to be satisfactory; for no opinions can be fully satisfactory, which do not develope, and embrace, the original natural cause of animal heat and motion.

mixture

mixture do not convey any precise or adequate ideas, upon which to establish any one fixed or leading principle, without a perfect knowledge of the true nature and *modus operandi* of the establishing, actuating, and supporting agent,* or natural cause of heat and involuntary motion;† how

* Which agent this doctrine considers as the instrument both of all evident external causes, and of the mind itself, the mind influencing it by means of the tonic power of the brain; by which the mind presides in intellectual operations.

† That the agent which is the cause of all heat and involuntary motion (which this doctrine supposes to be a phlogistic aura, or modification of phlogiston) is likewise the instrument of all evident external causes, is proved by this circumstance; that an insulated heart, or limb, recently taken from an animal, may be continued in action and reaction for a very considerable space of time, by the electric focus.

much more are we indebted to the ingenious inquirers into experimental philosophy, than to the labours of medical men, which have all unfortunately been long directed more to discoveries from the microscope,* than from chemical effects! how much more deserving of our attention would it have been to have taken the line of experimental philosophy, as the most likely

* By one we are gravely informed, that the red particle of the blood is flat; by another, round; by a third, that there are lymphatic glands in the wing of a butter fly, &c. &c. and by a fourth, that having wiped the glasses, he discovered, that the whole was microscopical illusion; and that the minuter parts of the several organs were so exquisitely formed, that nothing certain could be determined respecting them; and in particular respecting the formation of glands, nerves, lymphatics, and absorbents:—therefore, the powers which actuate them form the leading considerations for medical attention.

path

path that might lead us to discover the true nature of this mysterious agent! —how much more promising would it have been to have sought for it in every element, in the air, in the genial heat diffused through nature, in the water, and in the earth, as well as in all their variable modifications! or if such speculations were deemed too dry or too laborious, with what delight to ourselves, and profit to our patients, might we have searched for it amongst the peculiar diets of various climates, which reason had led mankind to appropriate to their use, and the propriety of which experience had sanctioned! for these we should have found to be essentially and necessarily different in different climates and seasons, and we might thence have drawn conclusions by analogy.

S E C T. VI.

BUT instead of such promising inquiries, our present most celebrated teachers, whenever they do at all depart from clinical empiricism, attach themselves chiefly to the German tenets ; but their predilection for clinical empiricism, arising from the lazy supposition that ultimate causes are not discoverable,* is at present so predo-

* It certainly may be maintained, that from effects we are enabled to form an useful judgment of the essences of natural powers ; which is all the latitude of investigation contended for, as tending to elucidate and explain the natural cause of animal heat, and involuntary motions ; leaving the nature of fire, abstractedly considered, and of the vis imperans, or self determining principle, as impenetrable as the nature of the great Being himself, from whom they are derived, and in whose power they always are.

minant,

minant, and has so perverted their judgment, that, whenever they attempt to explain remote and proximate causes, they are as ambiguous and as undecisive as the oracles of old, and all their attempts at improvement of science are hence highly absurd and replete with error. To their particular attachment to Hoffman, we are indebted for spasm, atony, and mobility;—to Stahl, we owe the vires medicatrices, which have led too many to trust to nature;—and to Boerhaave, his plethora, obstruction, viscidities, and lentor,* considered as proximate causes.

S E C-

* When Dr. Huxham treats of the powers of antimony, he dwells much upon its spiculae, subtilty, and solidity or momentum, but totally omits to consider it as a substance which evolves phlogiston; but the greatest chemist of the present age was of opinion, that its medical virtues depend on its phlogiston: in which view of it,
the

S E C T. VII.

THE refinements of atony inducing spasm,* and of spasm supporting reaction, and of septic and antiseptic nonsense, without precise ideas of either vinculum† or agent ; and the dan-

the tonic must unavoidably give way to the humoral theory, which applies most forcibly to the support of the Brunonian system :—a system which is founded on just principles, and is scouted only by the interested and uninformed.

* The term spasm conveys an inapplicable idea, for the imperviency and collapse arise either from an excess or defect of phlogistic agency ; whereas spasm implies action in the part itself ; (atonia gignit spasmos—Hoffman) which action cannot take place as a natural effect, without a previous admission of nervous aura.

† When Dr. Huxham asserted the septic quality of the fixed alkaline salt, and Sir John Pringle declared it to be antiseptic, what ideas had they of the vinculum ?

Vide definition the 7th.

gerous

gerous doctrines, which maintain the locality of humours and eruptions, and assert the safety of repelling them, are the unhappy offsprings of the moderns: the latter of which opinions is clearly founded in a total inattention to the intestine motions of the fluids; and the first in mere sophistry begging a previous question,* and the whole, with their operose nosology, forms a most absurd jumble of inconsistent practice, mistaking symptoms for diseases, and diseases for symptoms.

* Quid respondet?—Reaction of the tonic power cannot spontaneously take place from vital power, without a previous admission of the phlogistic power:—for the phlogistic, tonic, and vital powers must follow each other in regular succession:—whether considered as acting in the more compacted parts of the solids; or in such as are of a more delicate texture.

S E C-

S E C T. VIII.

How much more reasonable is it to suppose, how much more probable, and reconcileable to self evident truths is it to believe, and how much within the scope of experiment to ascertain, that the human frame is wholly passive! for all the functions result from active powers without us, producing involuntary motions, and as involuntary motions are dependent upon the state of the general agency of the body, consequently the body is, in a physical sense, to be considered only as a passive machine, subservient to a long catalogue of external causes :* and on
this

* When we consider that the tubes, or cells in the brain, are equal to all the lines of an animal
mal

this broad hypothesis, it is probable, that a just and rational theory of disease may be established, and a more beneficial system of practice proposed for constitutions, the operations of the mind, miasmata, specific contagions, the injuries of time, and errors apart, we most certainly derive all the other causes of bodily disease from the atmosphere, from the different and perpetual attractions and repulsions going on in nature, from the deranged agency of the constituent principles of our diets, and from the particular effects of seasons, and of heat and cold without us; and I venture to advance,

mal body, and that the involuntary motions of the brain itself are passive to the action of fire; we cannot hesitate to conclude that, in a physical sense, the animal machine is wholly passive:—which idea of it is the basis of the Brunonian doctrine; and forms a most satisfactory foundation for common sense to build upon.

that

that tone and atony,* action and reaction, the vires medicatrices, vis nervæ, septic and antiseptic power, and intestine and peristaltic motions, and the effect called stimulant effect, or excitement, are all produced and regulated by one general and universal cause; which cause was coeval with the creation, and was the appointed instrument of the Almighty to establish, actuate, and support all his works.

* Tonics and relaxants are merely relative powers, from the quantity of phlogiston which they possess; for tonic power, considered literally, is merely momentary, and cannot satisfactorily account for the durable effects of the bark, myrrh and steel; but if we view them in the light of substances which slowly part with their fire, the mystery of their permanent stimulant and tonic powers, is immediately disclosed.

S E C T. IX.

THIS universal principle is phlogiston, a principle which can no otherwise become the object of sense, but by its effects in its evolutions within the human frame, when particularly applied to it; and throughout all nature, when more extensively considered: its agencies without us, or its more positive or negative state in external bodies, with respect to the present state in the human body, corresponding with and regulating its agencies within us; by inviting to or repelling from the whole or any particular organ.*

S E C-

* How do warm fomentations and pukices, flannels, the warm bath, the oil case, terebinthinate ointments and resinous plasters, cantharides

S E C T. X.

THIS universal principle exists in all solids and fluids, and is discharged from them, united with water in the form of aura, or fixible air;* and this discharge.

rides and boiling water, operate their evident effects, but by confining or adding to the power of the internal aura, which consequently expands, inflates, distracts and veficates!—how does cold water, the cold bath, neutro-saline lotions, the saturnine lotion and pultice, act, but by absorbing fire, and consequently taking from the power of the internal aura!—and are not, from a parity of reasoning, the more kindly effects of the bread and milk pultice, the subtepid bath, warm milk and water, and of the cerate of wax and oil, produced, by such external applications possessing that relative degree of power, with respect to the internal aura, which more nearly approaches to the natural degree of involuntary motions in animal matter.

* There is not, probably, a more indisputable truth in nature; than that water and fire go off together, united, in the form of air;
but

discharge is produced by every phlogisticating, vegetating, and fermenting process ; by the application of fire, by friction, by the solar ray, and by the division of parts : it is received into the body in aliment,* and is afterwards emitted from it by the lungs, by the pores of the skin, and by all the excretories ; perpetually within the body accumulating power, till it has

but admitting that they go off separately, the elastic nature of fire, singly considered, is sufficient to support this theory : or suppose the elasticity of the medium to be only the result of the operation of fire upon air, still the effects are the same.

* It will be hereafter explained that before birth it is received by the nervous coat of the vascular system, from the placenta ; and after birth by the stomach ; some other passage then opening to the brain : at the same time it will be maintained, that the nervous cylinders admit it progressively, and retrogradely, and each, and every way.

C

acquired

acquired that efficient degree which is adequate to the establishment, actuation and support of the several vital, animal and natural functions,* by exciting, or causing that degree of expansion, or inflation, which is necessary for tonic and atmospheric reaction.†

S E C.

* The different states of the solids at different periods of life, more or less impenetrable or open to the powers of phlogistic aura, are the proximate causes of many diseases.

† There is no occasion to suppose a double elective process, for the perpetual phlogisticating process in animal fluids to the ultimate resolution of every particle of matter, is sufficient to support the supply of expansive, inflating, and efficient aura; and did not the lungs, and the several emunctories, carry off the redundant and too exalted degree, animal existence would soon be at an end: for such is the quantity of real fire, thrown off from every particle of decomposing matter, that, comparatively speaking, a grain of fire is equal to a pound of aura: as for instance, a grain of emetic tartar is equal to

S E C T. XI.

It therefore follows, that the degrees of phlogistic operation within the human frame, for the due establishment, actuation, and support of the several vital, animal, and natural functions, call for the assistances of art, both for the preservation of health, and for the removal of disease; and constitute the most essential points for medical in-

to a drachm of volatile salt, and by its very superior quantity of fire (that excess which prevails, and is concentrated in all metals and semi-metals) will equally pervade the mucus of the stomach; repel the nervous aura from the stomach to the brain; and thereby excite, or occasion that excess of quantity and action in some corresponding cylinders, which will produce vomiting; or that muscular contraction of the stomach which is experienced in eructations, &c. &c.:—the same may be said of ipecacuanha.

C 2

vestigation,

vestigation, in all diseases and at all ages ; admitting in the utmost latitude, the subserviency of the several functions to the sympathetic affections of the body and mind, particularities of constitution, the injuries of time and errors, the locality of certain diseases, and all the stationary complaints of the different stages of life : and upon taking the most comprehensive & particular view of the whole, or a part of the diseases of mankind, either as naturally or occasionally arising, it will happily be found, that this phlogisticating process is so much within the reach of art, as to answer every reasonable expectation from medical assistance.

S E C T. XII.

PURSUING the idea, this principle, so necessary to existence, must be received

ceived into the stomach, blended with such quantities of water and earth* as shall be necessary to supply the waste

* The chemical and galenical subdivisions and combinations of salts, oils, metals, semi-metals, minerals, mercurials, &c. perfectly accord with the doctrine advanced, and fall under two ideas; the degrees in which they possess, and the points of time in which they part with their fire; which are both determinable by the modifications of their parts, for some part with it soon in the stomach, whilst others part with it more slowly there;—some part with it soon in the bowels, whilst others carry it into the blood, and hold it even there for a considerable time; and there is no other real specific difference between the several sorts of medical and diætetical powers; admitting that salts, antimonials, mercurials, &c. &c. by their spiculæ, subtilty, and solidity, resolve, attenuate and divide the fluids; but contending that such resolution, attenuation and division, as mechanical processes, could not take place in any degree, had not the phlogisticating or chemical process previously created or produced the fluidity, and did it not uniformly continue it?

which is hourly made ; for these latter principles are always passing on, and separating from the animal body, as well as the former ; but phlogiston must preserve a most incredible proportion in excess to the other two to create the necessary agency ; and must be so fixed and impacted, that the progress of its extrication and increase of power, must preserve a proper degree of expansive action on the tonic power, and of intestine motion in the fluids ; both for the due action required by every organ, and for the due elaboration and mixtion of the fluids ; it must likewise be so regularly supplied as to keep up the required balance of power, between the internal action and the tonic and atmospheric reaction ; which are observable and felt by all, to vary at least once, if not twice, in every revolution of the day and night.

It

It therefore follows, that this phlogisticating process, now so frequently mentioned, and probably clearly understood, is of the first consideration both in physiology and pathology ; and that the idea may be pursued, throughout every disease, and every indication of cure, and power of medicine, with the utmost practical advantages, and without either perplexity or confusion: the pulse, heat, secretions, and local affections supplying sure data, on which to ground the intentions of cure.*

* Whenever elective attractions take place, from the mixtion of dissimilar particles of matter, the fire from both is necessarily let loose ; so that attraction and commotion necessarily go together: which is proved by every affection, and symptom of disease ; and most particularly and satisfactorily by the symptoms of disease from contagion.

S E C T. XIII.

THE vital power, or conscious perception, incomprehensibly connected with, and affected by the motions of animal matter, is to be considered, in a physical sense, as a principle, sui generis, which is necessarily passive from combination; though it is confessed, and evident, that it possesses some absolute and spontaneous actions of its own. It is to be considered as an attribute of a superior power, occupying certain systems of earth and water,*
 actuated

* The nervous coat of the vascular system of a new being is, probably, the first line which is formed; for medullary matter is traceable from the placenta, through the interior substance of the coats of the funis umbilicalis, and through the vascular system of the new being: and may not, to hazard a conjecture for want of more
 solid

actuated by the universal cause ; which never was from the beginning, nor ever will be still, or at absolute rest ; but by the perpetual processes going on in nature, must necessarily be, sooner or later, called forth into sensible action ; even from ores, from stones, from all the works both of art and nature ; and from the inmost recesses of the earth :* and how much
more

solid ground, the amplexus venereus determine the form of the placenta, to be in lines equal to the lines of the vascular system of a new being : and consequently determine the animal to be, a man, a woman, a mouse, monkey, or an ass ?—for if nature is traced through all her operations, the chemical, or phlogistic always precede the mechanical operations.

* This is perfectly agreeable to the opinions advanced by Buffon and Toulmin, respecting the perpetual agencies in the earth ; which are proved to be, as far as we can penetrate, to the 48th degree of heat, by Farenheit's thermometer ;—

more will the human fabric, that wonderful assemblage of complex and delicate parts, be affected by every variation in the general process, and by even the smallest deviation from the equable and relative degree; however greatly such occasional deviations may be, in the great scale of nature, productive of some particular, or the general good!*

S E C-

ter:—and, most probably, an internal phlogisticating process in the earth is not only the cause of the internal heat, and of volcanic eruptions; but likewise of the earth's atmosphere.

Vide Prof. Bergman *Opus. Med. et Chemic.*

Mr. Kirwan on Mineralogy.

Dr. Watson's Chemical Essays.

* The ancients attributed many of the diseases of the animal œconomy, as the epilepsy and mania, to the phases of the moon; but as such phases do not in the least affect the quicksilver in the barometer, we ought to look to the
ope-

S E C T. XIV.

AGREEABLY to this doctrine the *vis medicatrix* will appear to be a natural effect only, produced by the universal cause, in its operations on the tonic power of the brain; that widely extended and subdivided organ, in every part of which phlogistic aura is highly efficient and exalted; and by means of which it is, in this efficient state, whether we are sleeping, or waking, every moment of our existence, in union with, and by its agency and elasticity, expanding and inflating every tube and every cell in every fibre; necessarily exciting tonic and at-

operations between the earth and its own atmosphere, the causes which do, for a solution of the difficulty: to which causes may be rationally attributed irregular distributions of the internal aura, and consequent local congestions, when the idea is applied to pathology.

mospheric

mospheric reaction, and communicating the impulses received on the body to the brain, and the impulses received on the brain by volitions, to the body.*

S E C T. XV.

HENCE it may be presumed, that when the phlogiston is obstructed in its usual direction, or progressive course from the brain through the body; whether it be obstructed in consequence of its own excess of action, producing the

* The tonic power in different organs appears to be differently formed; in some vessels the fibres are circular, and in others spiral, and longitudinal; consequently the motion, and direction of the aura, are determined differently by the circular, spiral, or longitudinal form of the vessel in which it moves; and thus aura moves contrarily, probably, in the vessel itself, and in the nervous coat of the vessel, at the same instant of time.

local

local effect, called spasm ; or whether it be obstructed by lesion of the simple fibre, by pressure, from congestions, or from some cause or other producing an unequal distribution of it, and consequently producing a collapsed or impervious fibre, or the states called by some, atony and spasm, still the effect is the same, obstructed aura ; from which first effect arises the secondary effect, of increased action in the brain, from the aura moving retrogradely with respect to the brain, from the part first affected. Hence follows increased action of the whole frame, more sensibly felt in the part first affected, from the greater degree of action in that part, distracted and distended by accumulating aura, and by the reaction of the tonic power of the brain ; particularly actuating that cylinder or those cylinders which connect with it : and hence

hence arises that degree of local action which is sufficient to remove the effects of the offending cause, whether it be obstructed lymph, *materia perspirabilis*, bile, *scæces*, gout, scorbutic acrimony, medullary matter, or otherwise ; but the auxiliary power, the *vis medicatrix*, or accumulated fire, may be supplied more or less,* and there-

* The locality of the bronchocele ; the resolution of all tumours, arising from cold or asthenic causes, by electricity and the local application of æther ; and the facts, that lascars and monkeys, when they come into the north, all become scrophulous, are circumstances which prove this observation :—and under this head may be considered the good effects in cleansing, and healing foul, and habitual ulcers, from cold causes ; as likewise the good effects of the focal heat, from a burning lens, in the cleansing of such ulcers ; and of the local application of *tinctura thebaica*, æther, and spirit of turpentine, joined with invigorating nourishment, in establishing their cure.

fore

fore may stand in want of the assistances of art, and cannot be trusted to alone.

S E C T. XVI.

FURTHER to illustrate this opinion, it may be considered, that every atom of animal as well perhaps as of all other matter (for it would puzzle even Lord Monboddo himself to draw the line) coheres and lives by the relative agency of phlogiston; and that all matter, which is not an absolute caput mortuum, is in perpetual motion, from the perpetual process within itself; and that every partiele of that matter in living animal bodies admits of having its proper degree of action so increased as immediately to acquire to itself with every degree of increased action, a
pro-

proportionate increased degree of fire, which may then be denominated vis medicatrix; because it may necessarily expand and excite such a degree of tonic reaction, as may be sufficient to remove the effects of the offending cause; or may be in that excess which may destroy: on the other hand, this process may, for a time only, be so interrupted, as eventually to acquire the necessary degree of tonic reaction from a surcharge of fire, obstructed in its usual direction; or the process may be so long interrupted and suspended, or be so languid and inert for want of a sufficient vis a tergo, or succession of fire, that the tonic power may be irrecoverably lost in the part primarily obstructed.*

S E C-

* Excess or defect of phlogistic agency produces superior or inferior excitement, and consequently

S E C T. XVII.

AND thus the powers of phlogiston expand and inflate every cell, excite tonic reaction, and open every pore, and by natural and necessary effects casually acquire that degree of power, which so frequently produces the most favourable terminations of inflammations, and obstructions; when nature relieves herself without the assistances of art: but the powers of nature are frequently so sluggish and inert, or so violent and active, as to require the assistances of art;* which

D happily

frequently a state of collapse or impervieney in the smaller vessels, and hence local congestion and turgescence may equally take place in either case.

* Perfectly aware, that there is a perpetual process of elective attractions in the human fluids,

happily can be effectually employed by opposing contraries to contraries; which, in general, will succeed, if habits, constitutions, and the infortunia, which are unavoidable in the nature of things, are not so unfavourable as to defeat every contrary power which art

ids, from an infinity of natural causes; it is nevertheless contended, that such attractions, even in the plague and canine madness, would pass through and alter such fluids, with very little danger to animal life, under a strict medical attention to regulate the degrees of heat and action; proofs of which occur, in the successful treatment of the plague in Russia, and of the canine madness, by a gentleman deceased, in the west of England, whose manuscript cases I have now by me; in which the utmost success attended the most cooling plan, unremittingly persevered in for months: and so perfectly convinced am I of the innocency of the canine virus, under this regimen, that I would as soon be bitten by a mad as by a tame dog.

can-

can employ, either to counteract the offending cause; or, if the cause be removed, to adjust its effects.

S E C T. XVIII.

EXTRICATION of phlogistic aura from the ingesta, and its accumulated power, may either be, from natural or occasional causes, above the state of general and proper secretion, or below it: if it exceed, its first effect will be increased sensible heat and action, which the touch and the pulse will immediately discover; and this increase will, by the medium of the brain, be very generally extended through the system to every organ and simple fibre; and ultimately will distract the fibres in some particular parts or organs, and

constitute local inflammation and lesion of various degrees.*

S E C T. XIX.

INCREASED agency from extrication and supply in excess, most immediately and generally, because most efficient and exalted in the brain, produces head-ach, and suspension of the several functions from the too great action through the nervous cylinders, communicating from the brain to every organ;† but we find the seat of pain,

* Vide Dr. Kirkland's Medical Surgery on the subject of inflammation, who, very satisfactorily adjudges the proximate cause of it to be the effect of internal animal fire.

† Suppose for instances, rhubarb and nitre, soluble tartar and spirits of lavender; or nitre and camphire are given combined; such opposite

pain, inflammation and distraction of fibre, to be variously determined, by causes which we cannot precisely discriminate, to the lungs, the pleura, the diaphragm and intercostals; to the throat, to the tendinous fasciæ over the joints, and to the several viscera; of course suspending the secretions either partially, or generally; and exhibiting an inflammatory disease of some one or other accepted denomination.

posite powers correct each other, and will very little alter the state of the mucus of the stomach; but will afterwards separate, and each will operate in the fluids, and on particular organs, its peculiar effect; dependent upon elective attractions, and upon the modification of parts:—for particular organs are capable only of particular motions, dependent on mechanism; therefore some of the preceding powers will greatly actuate the kidneys, some of them the stomach and bowels, and others the lungs and skin; and thence become purgatives, diuretics, &c. &c.

S E C T. XX.

AND here it is to be noticed that, from some natural or occasional cause, either in the solids or in the fluids, such inflammation may arise, either locally^{*}
or

^{*} Local inflammation may arise both in excess and in defect of general agency ; and the true discrimination of the remote cause, to ascertain clearly whether the inflammation be of the active or passive kind, is of the utmost importance: the proximate cause is from an error loci, from foreign matter, excess of fire or aura, or from some cause or other producing an excess of expansion, or inflation in a determinate space, which determinate space is bounded by spasm ; but spasm in this case is only the action of a secondary or passive power, excited by a local or active power, in a degree superior to atmospheric or tonic reaction ; and superior to any effort of either vis medicatrix, vital power, or living principle ;—which, considered as a
conscious

or generally, even in the most equable supply and agency of phlogistic aura, there being some predisposing or remote cause, which acts by such slow and imperceptible degrees, that art and precaution are totally superseded. It then follows, that local distention and distraction of fibre ensue, the fluids stagnate, resolve, and become purulent, unless the distention and distraction can, in the early period of such effects occurring, be relaxed and prevented, which is an event that we can

conscious perception, somehow or other influencing matter, and administering occasional relief, is the stumbling block of the Cullenian system; and all the sophistry of the *conspectus medicinae* cannot remove it: for all involuntary and general agencies of the tonic power, physically considered, are governed and regulated by the relative degrees of the phlogistic power; and that wholly independently of the mind or conscious power.

frequently procure, and always ought to aim at: but if neither relaxation, resolution, nor suppuration can be effected, the first effects will be very generally aggravated and extended, the pulse will be greatly, yea excessively, excited; the secretions will be greatly, yea totally, suspended;* the diameters of the extreme vessels, and of the exhalants, and lymphatics, will become impervious, the absorbent faculty will of course be lost, and universal obstruction must ensue both externally and internally; the fluids will then recoil upon the lower viscera, and ultimately the brain itself will become too greatly distended by phlogistic aura, and death of course follow from the excess of action.

* In this situation the tonic power is oppressed by the phlogistic power, and the taking from the latter will, in effect, add to the former.

S E C T. XXI.

ON the other hand, agency in defect is consequently below the state of general and proper secretion, and is followed by immediate debility, with a slow and small pulse, head-ach, and langour; and, at first, with a suspension of the several secretions: but accumulations soon arising in the several viscera, from the passive state of the several secretory and excretory organs, the thinner parts of the fluids will, necessarily, and very soon, separate and run off; whilst the remainder will be unequally distributed, and form partial obstructions and accumulations; passive inflammation will of course locally ensue; a first effect will become the cause of a second, and that second produce

produce a third ; a fever will arise from the partial and passive inflammations ; symptoms will multiply upon symptoms ; and a chronic case will be formed of the most complicated and difficult nature ; and the same catastrophe, as from excess of agency, will follow from a contrary remote cause.

S E C T. XXII.

At certain periods of disease, a very small change of the degree of phlogistic agency, will change the one form of disease into the other ; and the utmost attention is necessary in acute cases to watch, and guard the natural or artificial change: the natural change or crisis takes place, at that point of the effects of the proximate cause in the one form of disease, in which the

too great agency begins to lessen ; and at which, in the other form, more efficient agency begins to arise ; and such changes very frequently arise from natural causes : the artificial change may be the effect of well adapted diet, regimen, and medicine ; and therefore such periods call for the greatest exertions of judgment, and the most exact attention, as life or death depends upon the management of the present hour.

S E C T. XXIII.

SUDDEN exposures of the body to cold, or to cold and moisture, particularly when agency prevails in excess ; sitting at such times in cold streams of air ; drinking cold liquors ; standing long on cold damp ground ; or keep-
ing

ing on any part of the clothes which may be wet or damp: on the other hand, drinking too much wine or spirits, excess in eating, violent exercise of body or mind, or passions of any sort; any one or either of these circumstances or errors is sufficient to produce fatal mischief, by checking or raising the process either partially or generally; and thereby producing the enemy in different shapes, in different seasons or climates.

S E C T. XXIV.

THESE truths we notice as the frequent remote causes of many disorders, particularly of the inflammatory sore throat and inflammatory fever; of the phthisis pulmonalis, catarrh, pleurisy, and rheumatism; and likewise of putrid,

trid, bilious, dysenteric, and nervous disorders ; the specification or type of the disorder depending much upon seasons and climates : for climates and seasons are found to determine the genus of the disease, by creating the predisposition, and consequently giving it a specific modification.

S E C T. XXV.

THE agency of phlogiston is most evidently different in the different states of the fluids ; it is clearly more rapid, but less abundant in quantity, in the thinner state of the fluids, than in that which is more firm and viscid ; and the solids are, necessarily, in that state of the fluids and of agency, more extenuated by the consequent abrasion : the viscid and firm states of the fluids
accom-

accompany the strong, elastic, and more solid state of the fibre; and the weak texture accompanies the tender, irritable, and extenuated fibre; and both these described cases of both solids and fluids are the consequences of the excess or defect of general agency, when they are not simply constitutional; and are dependent upon, and produced by, many natural causes, which are unavoidable in the usual avocations and habits of life, as well as from diseases and errors in the non-naturals; the solids and fluids mutually depending upon each other, and equally demanding our attention; though it is to be understood, that the former are dependent upon the latter, from which they are originally derived, and by which they are afterwards supported.

S E C T. XXVI.

WE are likewise to attend to the effects of artificial electricity,* and of exercise; to the sensible degrees of differences in the effects of the various diets on the proper degree of intestine

* The medicinal effects of artificial electricity are strongly corroborant of the truth of the phlogistic system; for a certain systematic assemblage of parts, in impeded or suspended animation, or in obstructed secretion, may be assisted and restored by the powers of electricity; but if the vinculum of the fluids be broken, if the intestine agency in them be lost; or if the tubes in any particular vital organ be totally or even partially collapsed or impervious, the powers of electricity will be vain; and more especially so, if violently and excessively applied; the only chance being from a gentle, moderate, and continued electric suffusion:—for shocks will, at such times, add to the injury.
motions;

motions; and to the effects which are observable in the violent agitations of the fluids, previous to erysipelas, to scorbutic and most eruptions; previous to measles, nettle rash, small-pox, scarlet fever, bilious discharges, and to most epidemics: for in the symptomatic, and assimilating fever, previous to, or constituting such appearances, the vinculum or central connecting medium of the fluids is greatly weakened and nearly broken;* as in the plague, and violent fermentation: but recovers itself again, simply, by the attraction of cohesion in the fluids

* The feculencies observable in urine, and probably going off in the other secretions, are such parts as the fluids do not assimilate to their own nature, upon the recovery of their proper vinculum; and such as they part with in their depurations, independent of the abraded matter from the solids, and of the constant excretion of medullary and other animal matter.

them-

themselves in a properly regulated heat and action; which heat and action are much within our power at the accession of their too high degree.*

* The necessary regulations of the heat and action in the process of fermentation, and in the symptomatic fever in the assimilation of the fluids to the nature of specific contagion, prove the similarity of the processes in their intestine actions in all fevers, and is an undeniable proof, that the spasm, recurring in remitting and intermitting fevers, the nature of which has so much perplexed the faculty, is neither more nor less, than a collapsed or impervious state of the extreme vessels; necessarily produced by that excess or defect of general intestine action in the fluids, which naturally varies once or twice in every twenty-four hours; which variation affects the tonic power even in the highest health, but in cases of debility produces a truly obstinate effect to adjust, from this circumstance, that the cause is a natural cause.

S E C T. XXVII.

We have likewise to observe, that diseases arise, at certain periods of life, as natural causes; from the progress of the simple fibre from its first cohesion, to its maturity, callosity, or ossification; and that these arise, sooner or later, depending upon habits and original constitutions, and are either general or local: we are in particular to observe the tender state of the fibre, and the weak texture of the blood in infancy, a period perpetually subject to inflammation; we are to notice the period of epistaxis, of hæmoptoe, the times of puberty, and of the phthisis pulmonalis; and further, the fixed state of health and strength very generally enjoyed from twenty-five to thirty-five, when the periods of the changing state
of

of the fibre,* and of the increasing volume of the veins commence; and are followed by a long train of complaints, many of them the unavoidable attendants of advancing age; in which gout,† gravel, and earthy matter separate,

* Hence the structure and elasticity of the uterine vessels will admit of monthly congestion; or local plethora, from 15 to 45; at which latter period the fibre begins to become rigid, and of course to be incapable of the expansion necessary to admit of congestion.

† The proximate cause of the gout is most assuredly obstructed medullary, or other animal matter, occurring in a debilitated state of the tonic power of the brain and its appendages; and arises from such remote causes as weaken that power, either directly or indirectly; for instance, independent of constitution, changes of seasons or weather, inanition, cold and inaction weaken that power, and bring on fits of the gout, as certainly as too much claret, animal food, or too much exercise:—indeed, the

parate, stagnate, and are deposited; when the hæmorrhoids, jaundice, dyspepsia, asthma, melena, schirrus, apoplexy, gutta serena, palsy, dropfy, and sphacelus, fill up the measure of bodily infirmities: the executive powers of the mind, always the same in its essen-

the necessary excretion of medullary matter, from every emunctory, leads us to view the nervous system, and the agency of the aura which propels the animal matter in that system as considerations of the utmost moment in all diseases and at all ages; but more particularly so in the advanced stages of life:—and here it is to be noticed, that the existence of medullary matter by no means involves a contradiction, or militates against the ideas of the nerves being folliculi, or fasciculi of hollow cylinders; for the aura, it is contended, is diffused through this soft, and spongy medullary matter, by means of cells or tubes: — on the other hand, suppose them to be solid, which we have no right to do, as the olfactory nerves of the ox are hollow, still the relative powers of fire will equally pervade them.

ual

tial nature, varying from infancy to age, with the tender, mature, and callous states of its immediate instrument, the tonic power of the brain.

S E C T. XXVIII.

By which it will appear that the diseases of the different stages of life are, in general, from the same causes producing the same effects in the same states, but different effects in different states; depending upon the different period of life, state of the fibre, and volume of the veins,* and on the degree of the power applied: the general tendencies before maturity being to the inflammatory kind, from the agencies on a tender fibre; and in the

* Consequently the rule of applying contraries to contraries will always hold good.

advancing, and more advanced ages, the tendencies being to the weaker class, from the loss of faculty : such are the general tendencies, but we see exceptions every day from varieties of constitutions and habits of life.

S E C T. XXIX.

It will likewise appear, from the natural quality of the simple fibre, that continued agencies in excess will eventually create disorders of the weaker class ; in which case infancy and middle age may be afflicted with the same disorders as advanced age ; independent of such as may be hereditary and constitutional : for there is a certain degree of action of the tonic power necessary, above or below which, if continued for any time, the same state
of

of weakness must unavoidably ensue; the middle degree of agency only, relatively considered, establishing and supporting such proper actions of the several functions, as constitute the states of health and vigour.*

S E C T. XXX.

THE previous tendencies being known, I mean the two opposite states, the one verging on the borders of vigour in excess, the other approaching to a state of weakness, in either of which a small deviation will turn the scale, the indications of cure may then be truly taken from the state of the primæ viæ, from the pulse and secretions; from the appearances of the

* Vide Dr. Brown's Elem. Medicine,
Dr. Jones's Inquiry into the State of
Medicine.

tongue, the degrees of heat, and of local pain or affection, collectively, but from neither separately ; always attending to original constitutions, habits, seasons, errors, situations, and reigning epidemics.*

S E C T. XXXI.

IN the advancing period of life some parts weaken, give way, and admit of congestions, and præternatural discharges ; whilst others become torpid or callous, or in appearance ossify, from separations, depositions, and concretions of earthy or ossific matter ;

* In practice it is found, that in different climates an attention is required to every variation of wind and season ; and that in the warmer climates, it is even necessary to anticipate the approach of such variations, by certain customs peculiar to situations.

and

and such likewise admit of congestions, and præternatural discharges: such effects are the lot of human nature, must come sooner or later, and our utmost care and attention can only soften the evil, protract, and make the fall the easier.

S E C T. XXXII.

AT this period of life the fibre loses its elastic faculty, and the visceral organs, necessarily, partake of the same loss, but whether the fibres weaken or become callous, which last is their progressive and natural tendency, the treatment must, in both, consist of very moderate, but permanently active powers, both non-natural and medicinal;*

accord-

* At this period Bath or Buxton waters, occasionally used, are found to be, for very obvious

according to the degree of loss of faculty sustained: the degree of which, and indeed of all other deviations from health, will not admit of clear definitions, and can only be known by much attentive observation; for which reason I content myself with attempting only the outlines of the phlogistic doctrine.*

S E C

ous reasons, highly beneficial; this period requiring more efficient powers of the invigorating nature; and more particular care and caution against every thing of the debilitating kind:—but it must be observed, that temperate baths as well as temperate medicines, continued one degree above the natural standard, produce their beneficial effects, by supplying by time what they want in momentum; and that in the use of baths, it is a matter of much consequence to begin with the most temperate; and probably would always be the soundest judgment to continue them.

* Suppose, for instance, a scruple of one of the following medical powers was to be taken into the human fluids every day, for four successive

S E C T. XXXIII.

In pursuing all our intentions we must advert to the ingesta; and must consider

cessive days; viz. nitre, camphire, gura ammoniacum, and calomel:—each will occasion particular elective attractions in the fluids, and of course such particular motions of particular organs, as shall determine each to have its particular effect; when it will in part be ultimately discharged from the body, by some one excretory organ, prior to its absolute decomposition and unaltered in its nature:—so that, supposing the diameters of the secreting vessels of the several organs to be 4, 3, 2, and 1, four different secretions will be excited by the four given powers, according to the greater or less diffusibility of their several parts; and to the slowness or quickness of their decomposition; which will relatively depend upon the quantity of absolute heat or real fire which they severally contain:—but if the four powers be given combined, as in daily medical practice, very general will be the
comme-

consider the several vital, animal, and natural functions, as more immediately affected by the several parts of the ingesta, in digestion, resolution, and decomposition ; we must attend to the quantity of fire, earth, and water, which they possess ; with respect to the comparative degrees, which the then state of the body, and stage of life demand ; and to their likewise possessing such quantities and parts as the fluids and solids require to repair their waste ; and such as they can appropriate and

commotions in the fluids, and consequent actions of the solids, from the mixtion of dissimilar parts of matter ; which dissimilarity will necessarily occasion various elective attractions :—thus nitre, camphire, gum ammoniacum, and calomel :—thus miasmata and specific contagions, as the morbillous and variolous matter, will severally occasion particular elective attractions, with consequent evolutions of fire, and increased actions of the solids.

assimilate

assimilate to their own nature, from the general mixtion : we are likewise to notice that the central connecting medium is a certain relative degree of agency, from a due proportion of all ;* and that all secretions and accretions are performed by affinities and elective attractions from the ingesta, passing through certain mechanisms, and kept in perpetual progressive motion, by the phlogisticating process, regulated by

* For in the human microcosm every part is absolutely necessary to establish, actuate and support the whole ; and the form, substance, surrounding medium, and mechanism of the several parts to be actuated, are all essential to effectuate and support the vinculum of the fluids ; and to receive that living principle which pervades the universe ; and which gives to, and supports in, men, animals, and vegetables, sensations, properties, and powers, limited to their several necessities ; which sensations, properties, powers and necessities, depend upon the mechanism of their parts.

atmos-

atmospheric and tonic reactions; which process we are constantly to keep in view and regulate: for all superior and inferior degrees of continued agency, either directly or indirectly, disturb the several functions, and tend to destroy the vinculum.*

* The power of phlogistic aura increases by confinement in the body; and always obtains in the most efficient state in the brain, and its appendages; which, from the softness of the medullary matter, are peculiarly well adapted to receive, and to communicate impressions, and to be the medium of reciprocal and instantaneous intercourse and power between the brain and other parts of the body; and to admit voluntary motions to pass progressively from the brain, and impulses on the body to pass, retrogradely, to the brain; by means of phlogistic aura, actuated by the tonic power.

S E C T. XXXIV.

HITHERTO the elemental and primary agencies of phlogistic aura in its evolutions, and intumescent effects in the fluids, dependent upon atmospheric and tonic reactions, have been principally considered; and it now remains to notice the more local, proper, and secondary effects of the same power, as it is variously modified in different sorts of chemical, and galenic bodies; which from the various manners of their composition, part with their fire,* sooner or later;

* Every particle of foreign matter, from its dissimilarity with animal fluids, occasions elective attractions and consequent commotions; but the diversities can never be so accurately known, as to have their specific antidotes ascertained otherwise than by accident.

first,

first, to the mucus of the stomach, then in the bowels, chyle ducts, in the blood, &c. &c. &c. producing of course emetic, purgative, diuretic, or sudorific effects; and forming a proper and secondary set of medical powers, to be so classed and named, in distinction to such as are elementary and primary: * from which simple view of all medical powers depending on their quantity of fire, I am, by analogy, led to conclude that their effects are only superior or inferior on the several functions; de-

* As it is advanced, by Sir Torbern Bergman, that antimonial virtues depend on phlogiston; and that the emetic quality of emetic tartar depends on its phlogiston; may we not infer, that from the operations of the same element arise the emetic powers of ipecacoanha, the purgative powers of rhubarb and jallap, and the very stimulant and resolving powers of mercury, &c. &c.?

Vide Cyclopæd. nov. edit. article, tartar emetic.

Bergman's Opus Med. et Chemic. vol 3.

pendent

Notes to be added.

Introd. p. 5. th Calidum innu-
-tum in humido radi-
-cali fundatur.

th Pilcairn.
p. 39. Particulae var:
quines habent vires pro
ratione centripetas &
centrifugas.

Willis.

Sect. p. 8. th Substantia agentes,
viribus activis & mecha-
nicis instructa.

Hoffman



pendent more on the positive or negative states of the fire contained, and the fire given, than on their spiculæ or solidity of parts; and that all other distinctions are totally unnecessary, and can be productive of no good, either in theory or practice: for thus by reducing the number of curative intentions, by establishing two precise ideas,* and simplifying the powers of medicine, practice and theory will go hand in hand, and the great medical objects will be more certainly had in view and effected; and that on principles which have been pursued repeatedly, and repeatedly, with never-failing proofs of the soundness of their basis:—and I am therefore warranted by experience to maintain, that much ge-

* Superior and inferior agency, or excitement; and, consequently, superior and inferior effect.

neral good would result from their adoption.

SECT. XXXV.

I therefore, with much submission, propose from the preceding cursory reflections, a summary of the elementary principles and rules always to be had in view; and conclude with a concise arrangement of elementary and proper powers: the propriety and justness of the whole of which will, I flatter myself, be found to be sanctioned by daily experience and observation; as well as by an agreement with that simplicity, and uniformity, which nature points out to us, as the proper line to be pursued in investigating and regulating cause and effect: for although physicians have, with infinite labour & industry, investigated the human frame;
have

have most assiduously attended to cases and facts, have published system upon system, and history upon history, and strained every mathematical and mechanical power for the benefit of mankind; yet having not till lately, by the assistance of natural and experimental philosophy, developed the true cause of animal heat and motion, and the *modus operandi* of the several elemental and proper powers, they consequently could not, with any degree of precision, trace and ascertain such physical causes and effects, as were really applicable to the human system; and have therefore hitherto failed, in all their attempts, to establish general rules for medical practice.

ELEMENTARY PRINCIPLES.

I.

PHLOGISTON is the universal agent, its degrees of agency in bodies always depending upon the different states, in which such bodies are positively, or negatively, circumstanced with respect to it in other bodies.

II.

In the formation of the human embryo, phlogistic aura is derived with the semen, and being exactly balanced by the maternal aura, forms that medium in which alone the seminal matter can, and does connect, and extend itself to constitute the placenta; from which the nervous coat of the vascular system

system of the form, male or female, to be created, is probably extended in lines passing in the funis umbilicalis: the sums of the lines of the placenta, and of the vascular system of the new being, being equal to, and correspondent with, each other.*

III.

The vascular system forms the solids and every particular organ, ending with the excretory ducts; and the new solids acquire firmness, and the tonic power, from the constant supply of

* As the humors of the eye convey the exact lines of objects to the retina, and describe such objects on the retina exactly as they are; so the lines of the vascular system of the fœtus may be merely elongations of the lines of the placenta, extended by phlogistic maternal aura, and determined, as to their shape, by some mysterious mechanical laws;—for the doctrine of animalculæ supposes an effect without a cause.

plastic matter, derived through the placenta, from the propelling powers of phlogistic aura.

IV.

At the full period of gestation, the stamina are completed, and the organs formed; and become sufficiently strong to bear the atmospheric, and to supply the tonic reaction on the contained aura; and as soon as the action & reaction, of the foetal and placental tonic and phlogistic powers, balance in favour of the foetus,* labour pains necessarily commence, and the new being is ushered into life by the mother's throes; a new system of circulation then commences; new channels open to convey the phlogisticating and nutritious matter; and

* The differences of labours on the north and south sides of the mountains of Switzerland, and in hot and cold climates, corroborate this idea.

the little foetus, which was before nourished by means of nutritious fluids conveyed by phlogistic aura from the placenta, ultimately acquires with animal life,* a power of nourishing itself by the mouth ; together with that vis imperans or mental power which it would have equally enjoyed as a foetus, if it had been an innate or ingenerate power.

V.

Thus from the hereditary principles and acquired similar parts, derived from animal fluids,

Phlogistic aura { regulated by atmospheric and tonic reactions,

* The circulation being very partial and incomplete, in foetal life, it is thence inferred, that animal life cannot be properly dated until the several functions are all completed ; which they certainly are not before birth.

establishest, actuates, and supports the
solids, and either directly, or indirectly,
endows them with,

Elementary power, or vis phlogistica,

Tonic power, or vis elastica,

and

Vital power, or vis imperans;
and produces the

Peristaltic motions,

Diurnal revolutions,

Actions and reactions;

in the several required degrees of

Alternate action and rest,

and of

Alternate plenitude, and depletion;
which are necessary to regulate and
support the

Vital,
Animal,
and
Natural

} Functions;

and these are severally, and each of
them

them respectively, distinguished, and known to be

Superior,

Equal,

or

Inferior :

by the

Pulse,

Heat,

and

Secretions ;

and

by the general, and local affections, considered collectively, and respectively to the

Age,

Habits,

and

Constitution :

and hence the various natural and occasional causes which derange the several powers, and functions, become the principal

principal considerations for medical attention, and investigation ; and the counteractions of those causes, and the adjustment of their effects to the natural standard, supply the only possible, or necessary general rules to regulate, and govern practice : and such will very readily arise from a consideration of the preceding observations.

GENERAL

GENERAL RULES.

I.

TO consider well the constitutional,
or acquired diathesis.

II.

To attend to every symptom, separately.

III.

To form the judgment of the proximate cause, from all the symptoms, collectively.

IV.

To trace the proximate to the remote cause.

V.

To determine the degree in which the remote cause acts, and to administer the negative or positive power which will counteract its operation; and it will follow, that the proximate cause will be superseded:—*Et contraria contrariis semper oppugnando salus integra elicietur.**

* Remote causes fall under the two descriptions of excess and defect of phlogistic agency, and all other distinctions are totally unnecessary; for such are merely several orders of effects, which require no deviation from this general precept; admitting that during the observance of it, particular effects will always require particular attention, but contending that such will never be found in contradiction to it:—for proximate causes, whether constitutional, or the effects of diseases, time, accidents, or errors, will all be either removed or palliated by applying contraries to contraries.

Vide Hippoc. aphor. 22, sect. 2.

Brunon. Elem. Med. 29.

PRIMARY,

PRIMARY, or ELEMENTAL, MEDICAL POWERS.

(To be considered and applied, relatively;)

INFERIOR or NEGATIVE.	SUPERIOR or POSITIVE.
Cold,	Heat,
Abstinence,	Excess,
Rest of mind, & body,	Action of mind, & body,
Air heated below par,	Air heated above par,
Water,	Fermented liquors,
Vegetable acids,	Minerals,
Evacuations,	Resins, & resinous woods,
Saline waters,	Vegetable oils,
Acrescent vegetables,	Animal oils,
Fruits,	Sulphur,
&c. &c.	Animal food,
	Native alkaly,
	Electricism,
	The thermæ,
	Alkalescent vegetables,
	&c. &c.

EQUAL

EQUAL POWERS,

Are such superior, and inferior powers, as keep up the balance between the action of the internal aura, and the reaction of the atmosphere and solids; and such powers, nature and our own habits, in general, apply for us: where art is necessary, they will readily occur.

SECONDARY, and PROPER MEDICAL POWERS,

Are such chemicals and galenicals as possess peculiar parts and affinities; and are either emetic, cathartic, diuretic, sudorific, &c. &c. dependent on the peculiar sensation, or secretion, which their fire, in the act and time of decomposing,* necessarily affects, or produces by means of

* The possibility of simplifying too much must here be noticed; but at the same time must arise a wish, that the fifty-nine elements, and the number of their comparative elective attractions, could be reduced to a certain useful number, for the purposes of medical chemistry; which, as it at present stands, can never be applied with the proper degree

of its correspondence with internal aura : and those which nature, chemistry, and the experience of ages, have produced, are severally pointed out in the London and Edinburgh dispensaries ; but the necessary knowledge of their relative and exact powers, and proper application, can be acquired only by a regular education, assisted and improved by practice, and observation.

And now let me ask, did not the Leyden give place to the Prussian theory, entirely from our ignorance of the cause of animal heat and motion ; and does not experimental philosophy satisfactorily unfold that cause, and add the greatest lustre to the Boerhaavian system ?—for it has been proved, that nervous energy is derived from, and is dependent upon, humoral eucrasia ; and that humoral eucrasia is itself dependent upon the

degree of precision ; for the general operations of three elements, in their most natural modifications, and most simple attractions, are as many as the human mind can comprehend and regulate.

relative

relative operations of fire in animal matter; which, evolving by a natural and most simple chemical process, the *necessarily-relative* agency of elementary fire, excites and supports such mechanical operations in the human system, as, under the Divine Laws, give it its existence and perfections.

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F I N I S.

